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ABSTRACT

This paper investigates the role of the budget as an instrument for realizing strategic change and as an influencing factor on the behavior of university faculty within the decentralized educational environment of the Netherlands. It distinguishes between a base component (lump sum allocation) and a special-purpose component (earmarked allocation) in budgeting. It also analyses several approaches to budget development in relation to the implementation of change. Major conclusions are: (1) that in Dutch higher education the budget is a limited instrument for the implementation of strategic change with some use in strengthening developments already initiated within a faculty but ineffective to implement change in a top-down manner; and (2) that change at the faculty level is more effectively stimulated by control devices than by detailed planning instruments. Section 1 of this paper provides a brief introduction to the Dutch higher education system. Section 2 describes some relevant aspects of university organization. Section 3 makes some general remarks about university budgeting and distinguishes a number of budgeting systems. Sections 4 and 5 analyze these budgeting systems as management tools for the implementation of strategic change, using experiences at the University of Utrecht as background. Section 6 presents some general conclusions. Contains 31 references. (GLR)

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UNIVERSITY BUDGETING: CREATING INCENTIVES FOR CHANGE?

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Abstract

A number of Dutch universities is engaged in a decentralization process, strenghtening faculty management and considering the institutional level as the centre of a divisionalized organization. This development gives rise to the following question: to what extent is university management able to implement change according to university strategy?

The paper investigates the role of the budget as an instrument for change. It distinguishes between a base component and a special-purpose component in budgeting. It analyses several approaches of budget development in relation to the implementation of change. Conclusions are formulated about the use of budgeting and control procedures.

'Universities,' I said, 'are the prototypes of the organizations of tomorrow.'
'If that be so,' said a Professor standing near, 'then God help us all.'
Charles Handy. Gods of Management (1978).

Power is bestowed by an audience after the play is complete.
James P. Carse. Finite and infinite games (1986).

1. Introduction

In the Dutch higher education system power traditionally has been distributed mainly between the government and the professionals within the faculties. The position of the management of the institutions of higher education is relatively weak, compared to the United States and Great Britain (Maassen 1986). Recently, there is a change in the steering philosophy in Dutch higher education, with the government attempting to step back and allowing greater institutional autonomy (Van Vught, 1988). Nevertheless, because of the legal constraints Dutch universities remain rather decentralized.

Some Dutch universities (among which the University of Utrecht) carry on the tradition of decentralization and strenghthen the position of the faculties. This development gives rise to the following questions: what is the value created by the central university level, in addition to the constituent parts of the university? To what extent is university management able to implement change from a point of view of an overall university strategy?

An important aspect of these questions is the potential role of the budget. Budget allocation is an important legal competency and a powerful tool of the university management, which may be used to influence the behavior of the faculties (Lisensky, 1988; Williams, 1984).

The purpose of this paper is to investigate the extent to which the management of a Dutch university is able to use the budget as an instrument to realize strategic change.

Chapter 2 describes some relevant aspects of university organization. Chapter 3 makes some general remarks about university budgeting and distinguishes a number of budgeting systems. Chapter 4 and 5 analyse these budgeting systems, with the help of experiences at Utrecht, as management tool for the implementation of strategic change. Chapter 6 formulates some general conclusions.

2. Some aspects of university organization

Several models have been created in order to explain the nature of a university as an organization. Often, these models emphasize the unique character of the university. An important aspect is the autonomy of the professionals at the basis of the organization. They derive their power from the fact that their work is too specialized and too complex to be supervised by university managers. A clear example of such a model is Clark's professional model with the mutual adjustment between the professionals as dominating mechanism of coordination (Clark, 1983). In Mintzberg's analysis the university is characterized as a professional bureaucracy (Mintzberg, 1979).

Other models emphasize the political character of university decision making processes (Baldridge, 1971; Cohen, March, & Olsen, 1972). These authors also mention anarchistic aspects and characterize the decision making process as "decision flowing": a never ending process in order to make results really work, with fluid participation and an issue carousel. "Decisions are not made as much as they are pinned down temporarily" (Baldridge, 1975, p.383). According to the well-known garbage can model "choices are made only when the shifting combinations of problems, solutions, and decision makers happen to make action possible" (Cohen, March, & Olsen, 1972, p.16).

The developments in Dutch higher education mentioned in chapter 1 throw a new light on the position of the central university management.

At the university level as well as at the faculty level there is no question of an integrated organization, but of a collection of rather independent entities, hold together by a loose administrative overlay. Within a faculty (small groups of) professionals are those entities. Faculties are clearly professional organizations: the influence of the professionals on the faculty management is substantial.

But seen from the centre of the university, not the professionals, but the faculties (the

middle-structure) are the composing entities. The management of the university as a whole is behaving more and more like the centre of a divisionalized organization, or (in Mintzberg's terms) the divisionalized form (Mintzberg, 1979).

The university, therefore, experiences conflicting power needs.

On one hand, several characteristics of a professional bureaucracy can be recognized, especially within the faculties, but to a certain extent also in the institution as a whole. The professionals strive to control not only their work, but also the decision making processes, at the faculty level as well as at the university level.

On the other hand, the university as a whole operates to a certain degree like a divisionalized structure, with rather independent divisions and a small technostructure for the headquarters striving for standardization of outputs. According to this model the middle-line (the faculty level) is the key part of the organization. Because the division is treated as a single integrated entity and the headquarters tend to impose its standards through the management of the divisions, a tendency towards centralization within the divisions can be observed.

The main features of the professional bureaucracy and the divisionalized form are compared in figure 1.

	professonal bureaucracy	divisionalized form
coordinating mechanism	standardization of skills as a result of training	standardization of outputs; performance control
key part of organization	operating core (professionals)	middle line (division management)
decentralization	rather decentralized	decentralized, but centralization within divisions
planning & control	little planning and control	much performance control

Figure 1. Main features of the professional bureaucracy and the divisionalized form (derived from Mintzberg, 1979).

As a consequence of the organizational changes, the University of Utrecht is engaged in a transaction from one organizational configuration to another. As Mintzberg points out, in these circumstances the "Political Arena" emerges as an important aspect of the functioning of the organization (Mintzberg, 1983, p.314). Political behaviour can be defined as behaviour outside of the legitimite systems of influence, tended to benefit the individual or group, frequently at the expense of the organization at large (Mintzberg, 1983, p.172).

Where, within the faculties, the professionals usually rely on the system of expertise for their power, they have to rely more and more on the system of politics in university matters. This development also leads to increasing political behaviour by the middle-line management which is heavily controlled by the professionals. In this context, it is important to realize that the central level of Dutch universities is composed not only by a Board of Governors, but also by a University Council elected from and by the members of the university community (teaching and research staff, supporting staff, and students). The main responsibilities of this council are drawing up the university five-year plan (the development plan) and the yearly budgets for the faculties and central service-departments. Not only by the way this council is composed, but also by the nature of its most important topics, the decision making is highly political.

Budgetary decisions are especially prone to political behaviour: "Decision making quickly becomes a zero sum game when there are insufficient funds for everyone to achieve their goals" (Hardy, 1990, p.308). Put in another way: "If politics is regarded in part as conflict over whose preferences shall prevail in the determination of (...) policy, then the budget records the outcomes of this struggle." (Wildavsky, 1984, p.4).

3. University budgeting

Budget and budgeting

There are numerous definitions of the concept of 'budget', whether or not related to higher education. The aspect most recognized is its function as "an instrument that enables the allocation of resources from one organizational unit to another" (Caruthers and Orwig, 1979, p.1). But the budget is also "a device by which the distributors of funds carry out their plans and signal their priorities" (Jones, 1984, p.19), or "a series of goals with price tags attached" (Wildavsky, 1984, p.2). And: "Viewed in another light, a budget may be regarded as a contract" (Wildavsky, 1984, p.2).

In most definitions we recognize three general functions of the budget: allocation of resources, implementation of plans, and accountability for outcomes (see, for instance, Jones, 1984).

Budgeting, then, can be described as an interactive process in order to determine the activities and related funds for a certain period, in quantitative, mostly financial terms, with the help of which the management is held responsible for the performance of the activities involved (Groot & Van de Poel, 1985).

University budgeting systems

University budgeting is concerned with the allocation of resources by the university management to the faculties and service departments. The latter, however, are not taken into consideration in this paper.

Several budgeting systems can be distinguished. The most relevant distinctions can be made according to the following dimensions (Jones, 1984; Groot & Van de Poel, 1985):

1. The degree of the freedom in spending the allocated funds.

   Two budgeting systems are especially relevant:

   - lump sum budgeting: funds are allocated without direct ties to specific activities or outcomes and without prescriptions on which cost categories they are to be spent;

- earmarked budgeting: funds allocated have to be spent for a activity specified by the funder.

2. The process in which the budget is drawn up.

   Again, I will distinguish two relevant budgeting systems:

   - non-formalized budgeting: there exist (almost) no rules concerning the factors that determine the budget; the process is characterized by a strong emphasis on political decision making;
   - formalized budgeting: the process makes explicit use of decision rules of a quantitative form, taking into account relevant factors that determine the budget.

In the budgeting systems of most universities both lump sum budgeting and earmarked budgeting can be recognized. Accordingly, the budget is composed of a base component and a special purpose component.

The base component, allocated as a lump sum, is the general fund appropriation (sometimes called "core budget") that provides base support for faculty operations, supporting a variety of activities yielding multiple desired objectives. The special purpose component has an earmarked character and adresses specific priorities, concerning short term activities rather than ongoing needs.

The base component and the special purpose component can both be arrived at in a formalized as well as a non-formalized approach.

Planning & Control

A budgeting system is more than a quantitative model. It is an interactive process to translate policies into activities and related funds and to provide a framework for accountability. Budgeting, therefore, is an essential part of a planning and control cycle (Anthony et al., 1984).

At the University of Utrecht the budgeting process is embedded in the planning and control cycle as follows (Otten & Savenije, 1990).

Every two years a development plan is drawn up, dealing with the research and educational

policy of the university. This plan also contains an internal financial scheme: an outline of the faculty budgets for the next five years, with the help of an allocation model and based on the goals formulated in the plan. In the years between two development plans the financial scheme is adapted to recent developments, if necessary.

In this financial scheme the outcome of the quantitative model is only calculated for the last year of the five-year period. For the years in between the budget is determined taking into account the outcome of the model for the last year, but also other considerations such as: last year's budget; the total available budget for the university; considerations as to how fast budget adjustments can be implemented.

The actual allocation of budgets for the first year of the five-year period is to a large extend based upon the financial figures for that year in the financial scheme. Consequently, there is no one-to-one relation between the outcome of the model and the actual budget.

The financial scheme at Utrecht distinguishes a base component for each faculty and a special purpose component that is allocated in order to stimulate a limited number of specified major innovations.

At the end of each year, the faculties have to send in reports, accounting for the activities contained in the yearly budgets.

4. The base component

The base component, allocated as a lump sum, is an essential part of faculty budgets. Because of the degree of freedom, the receiver of funds always prefers a lump sum budget to earmarked funds (De Vries et al., 1990). As a consequence of decentralization, one can expect a tendency to maximize the base component of the budget at the cost of the special purpose component.

Formalized and non-formalized approach

Traditionally, non-formalized budgeting systems prevailed in higher education, and especially the incremental approach. This approach takes the previous year's allocation as a base, which is then adjusted up or down depending on changes in a limited number of factors.

The occurrence of this budgeting system is embedded in the political structure of the university organization, the budget being the record of which interest group prevails. The budgetary response to priorities is typically an ad hoc determination concerning what increment is needed to effect programmatic change (Caruthers & Orwig, 1979; Lisensky, 1988; Wildavsky, 1964).

Because of its strong dependence on the political climate and its ad hoc character in meeting institutional priorities, the Achilles' heel of incremental budgeting is its long term perspective. It is not a very useful instrument for the translation of plans into actions.

Also from the viewpoint of accountability, the incremental approach is inferior. It takes the previous year's budget for granted and limits the discussion to the increment without an evaluation of the starting point. Likewise, any analysis of the relation between (changes in) outputs and budget will be a fuzzy one.

The formalized, formula based approach is often mentioned as an instrument to rationalize the discussion about the allocation of resources and the implementation of plans (for instance Hopkins & Massy, 1981). This approach makes use of a set of decision rules, sometimes sim-

ple, sometimes complex, which it reduces to quantitative form. It certainly is useful in providing a common language for negotiating and discussing the allocation of resources (Mayo & Kallio, 1983). However, in practice the rational-analytic ideal is often snowed under by the political character of negotiations and decision making processes (Hardy, 1988; Hardy, 1990). Even the model itself is likely to evolve from a model based on criteria directed towards efficiency, towards a more coalitional model reflecting the relative power of organizational subunits (Hills & Mahoney, 1978).

The formula based approach may be useful for the implementation of plans and strenghtening accountability, especially when input variables of the model are also indicators for the implementation of plans. But one must not forget that the base component is allocated as a lump sum, without any direct relation to activities or cost categories. Faculties divide their budget among departments, frequently with another formula, or even without any formula at all. For the accountability about implementation of plans, it is, therefore, necessary to specify concrete objectives beforehand, regardless of the parameters of the formula.

I will now describe some experiences concerning the base component, which are derived from Otten & Savenije (1990).

Experiences at Utrecht

Traditionally, the University of Utrecht has had an allocation model that was mainly enrollment driven. In 1984 a new model was adopted, because of the introduction of new budgeting procedures at the national level and the decline of budgets (Savenije and Otten, 1986). An important objective of the new budgeting procedures was the allocation of research funds to universities on the basis of the volume of submitted research programs of acclaimed and externally reviewed quality.

In the new model of the University of Utrecht, all activities were grouped into a number of programs, such as undergraduate teaching, graduate programs, research projects, management. For each program the total academic and supporting staff full-time equivalent

was considered. The model was highly normative, leading to lump sums to be allocated to faculties (Dijkman, 1985).

Due to the constant reduction of the university budget by the ministry of education, the outcomes of the internal allocation model were no longer in agreement with the available budget. This effected the credibility of the model, and in 1987 it was no longer accepted as an instrument for university planning and budgeting.

This caused a time consuming discussion about the possible changes in the model. Several proposals were constructed by the Board of Governors, but none of them could count on enough support within the university community. In fact, every proposal caused fierce discussions about the details of the model. The formula of the model led to a number of interim results before it reached the final outcome, such as teaching load, number of full-time equivalent academic staff, number of non-academic staff and so on. Although in the end all these results were put together into one lump sum, they all started to lead a life on their own. Faculties compared these results with the actual situation, with a desirable situation, and with the situation of faculties at other universities. This led to ad-hoc coalitions and very often completely contradictory claims. In the end the discussion was mainly focussed on the details of the model and was diverted from the real issue: can the faculties keep up the output and quality of their programs with the budget allocated.

In 1989 a completely new approach was adopted, on the condition that it would be a temporary one. In the financial scheme for the years 1990-1994 two main factors determined the budget of a faculty:

1. The degree in which a faculty contributes to the total budget of the university, the 'earning capacity' of the faculty. By improving the quality and/or output of their activities, faculties can influence the total budget of the university and consequently in- or decrease their earning capacity.

2. A limited number of deviations from the earning capacity, directly related to the research and educational policy as stated in the development plan of the university.

The advantage of this approach was that all the arguments were made explicit: there was no way to hide behind details of a mathematical model. It was expected that this approach would improve the quality of the discussion.

But now the end of this new approach appears to be in sight. Not because of the construction of a new, improved model, but because of a coalition of several faculties discontent with their budgets, their research capacity, and the relatively favourable staff/student ratios of the natural sciences compared to the social sciences, law, and arts. This argument is supported by several parties in the university council.

Therefore, because of the impossibility of political agreement about a formula, a less quantitative approach was chosen, which in turn is questioned for purely political reasons.

Conclusions

The base component of the budget is a rather limited instrument for the implementation of planned change. This applies especially to the non-formalized approach with its highly political character.

But it is not a law of nature that budgeting will become more rational by adopting a formalized approach. The danger is real that the very details of the model itself become principal issues of political discussion, not because of a special interest in the adequacy of the model structure, but purely with an eye on the outcome. Discussions, therefore, are diverted from the role of budgets as instruments for implementing strategic plans.

The model formula may contain input parameters that are also indicators for the implementation of plans, but there is absolutely no guarantee that this structure will be preserved in the budgeting procedures at the lower management levels. This threatens the effectiveness of the budget as a management tool for planned change.

As a consequence of the limitations mentioned, control and accountability procedures are necessary. But in order to monitor planned change, purely financial control devices will not

suffice. Analysis of input-output relations have to be combined with an evaluation of the degree in which the outputs are related to plans. However, this will not be easy: because of the lump sum character of the base component the relation between input and output will not always be clear and faculty cooperation is needed to generate this insight (James, 1988). Furthermore, desired outputs are not always of a purely quantitative nature and consequently it may be difficult to formulate the outputs in a measurable way.

5. The special purpose component

The special purpose component of faculty budgets adresses special priorities, not ongoing needs. The funds allocated have to be spent for a activity that is specified beforehand. Consequently, the special purpose component may be useful for the implementation of plans and will be used especially for innovative projects.

Decentralization implies a tendency to minimalize the special purpose component of the budget in favour of the base component. Its size will be limited, its application restricted to temporary grants.

Formalized and non-formalized approach

In a formalized approach funds focussing on a special activity are added to the base component. The decision to treat funding for a certain activity as a special purpose allocation rather than a element of the base component revolves around accountability considerations. In fact, the special purpose funds are added to the lump sum with the condition of specified output. With an eye on accountability, it is recommendable to formulate a concrete project, or a contract, which specifies the output, the time schedule, the persons responsible, etc. Involvement of the faculty concerned is strenghtened by a dual commitment, meaning that also the faculty pays a substantial financial contribution to the project (De Vries et al., 1990; Savenije & Van Rosmalen, 1988). The calculation of the funds needed will be formula based, considering not only output parameters, but possibly also input and throughput.

This budgetary approach is especially suited as a start for a new activity which sooner or later will be covered by the (enlarged) base component of the budget.

The non-formalized approach to the special purpose component usually takes the form of the following procedure (a "competitive approach"). A (mostly small) part of the university budget is put aside for special purposes. The university management specifies the purposes that it wishes to see accomplished and provides the faculties with guidelines for applications for

these funds. Applications are reviewed, usually against a set of preestablished criteria. The review consists in a yes-or-no-judgment, because ranking is very problematic, if not impossible. Generally, there are no rules to fix the amount of money that is granted to each of the succesful applications.

The decision about criteria is a rather political one, just like the ranking that may be necessary if too much applications are reviewed positively. "Outside the political process, there is no agreed upon way of comparing and evaluating the merits of different programs for different people whose preferences vary in kind and intensity" (Wildavsky, 1968, p.193).

I will now describe some experiences with the special purpose component, which are derived from Savenije & Van Rosmalen (1988).

Experiences at Utrecht

At the University at Utrecht the special purpose component is used for the budgeting of innovative projects. In discussing the role of the university and the faculty level, it appeared to be useful to distinguish two categories of innovative activities.

1. Professional innovation: innovation as a consequence of developments inherent to the discipline concerned, for instance the adaptation of a program to new developments in the discipline. Main source: professional knowledge.
2. Entrepreneurial innovation: the initiation of new activities as a result of changes in the academic environment, for instance a new field of study directed towards a new student market. Main source: an entrepreneurial attitude.

In theory, one can stimulate professional innovation by providing additional funds. But pressure can never stimulate professional innovation, which is not already started by the professionals themselves. Furthermore, a formalized approach is likely to fail in formulating criteria to differentiate between faculties. It can be expected in the long run that, on the basis of a competitive approach, each faculty receives approximately an equal share of the extra

budget. Finally, it is very difficult for non-professionals to review the output of a professional innovation and therefore to demand an account. Therefore, those who want to stimulate professional innovation by the allocation of funds, are advised to divide these funds among the faculties as a part of the base component of the budget from the outset, thus dispensing with long and expensive procedures.

Entrepreneurial innovation can be stimulated by the university administration, and in general has to be stimulated, because of the tendency of the professionals to perfect their existing activities instead of creating new ones (Mintzberg, 1979). The implementation is a process which involves mainly professionals and on which the central administration has a limited influence. Important conditions for the success of an entrepreneurial innovation are that it should not have an ad hoc character and that the relevant participants are all involved. In general the best guarantee for these conditions can be found when the initiative is born as a product of the planning process of the university, and the implementation is carried out by a task force of professionals supported by the university administration. The output should be clearly defined and monitored.

Experiences show that entrepreneurial innovation should not be financed on the basis of requests for revolving funds - the competitive approach. This is clearly illustrated by the history of the so-called research pool of the University of Utrecht (Koster & Van Noord, 1987). The university administration may very well formulate criteria for projects directed towards entrepreneurial innovation. But the professionals are mainly directed towards professional innovation. Therefore, the faculties, interested in the money divided as incentives for innovation, will be inclined to make already existing activities, themselves usually cases of professional innovation, look like entrepreneurial innovation, in order to meet the requirements. This phenomenon is called "grant chasing" by Baldridge (1980). The stimulus for innovation is often some outside offer for funding; but if there is no real connection to institutional needs, the project lives as long as the additional money is available.

Conclusions

The special purpose component may be useful in stimulating change. Distinguishing between entrepreneurial and professional innovation, special purpose budgeting is inadequate to stimulate professional innovation, because of the impossibility of satisfactory control devices. The non-formalized, competitive approach is also not suited for entrepreneurial innovation, because of its very political character in choosing criteria and ranking of applications, and the real danger of grant chasing.

A formalized approach offers possibilities to stimulate entrepreneurial innovation, only when there is sufficient commitment from the professionals involved. This commitment can be strengthened by a dual financial commitment. The decision which innovative projects are to be supported will become more rational if it is contained within a university development plan. It is important to realize that the role of the university management will rather be to support valuable ideas from the operating floor than to invent innovations itself (Savenije, 1989).

From the point of view of control it is necessary to specify the output clearly, which will not always be easy. As in the case of the base component, purely financial control devices will not suffice. Analyses of input-output relations have to be combined with an evaluation of the degree in which the outputs are related to the original plan.

6. Results and conclusions

The above analyses show that the only budgeting system that is more or less suited for the implementation of planned change is the formalized approach to the special purpose component. It must remembered, however, that the size of this component in general will rather small. Furthermore, in a decentralized organization there will be a political pressure from the faculties to minimize the size of this earmarked component of the budget in favour of the base component with its more popular lump sum character.

The most important general conclusions are the following.

1. In Dutch higher education, the budget is only a limited instrument for the implementation of strategic change. Budgetary decision making is very often a political affair. Furthermore, although university management is capable of stimulating change within the faculties, it has little influence on the direction in which the actual change is going. Budgeting procedures may be useful in strengthening developments that are already initiated within a faculty, but rather ineffective to implement some kind of change in a top-down manner.
2. In order to stimulate change at the faculty level, control devices are more effective than detailed planning instruments. However, the control function should not be strictly financial and its effectiveness is limited by the difficulties in measuring and monitoring outputs (James, 1988).

University management should adopt a management style which can be characterized as follows.

There is some central coordination of divisional strategies, mainly consisting of the centre's reaction to strategies proposed by divisions.

The budget, and especially budget changes, is considered as the first year of a strategic plan; short term objectives have to be explicated and monitored. It is recommendable to describe these objectives in some sort of contract between the central management and the faculties.

The control function is not strictly financial. Comprehensive, annual reviews are discussed with each division, including indicators for the realization of the objectives agreed upon (Angenent & Savenije, 1991).

This style can be compared to the one called "strategic control" by Goold & Campbell (1987).

It may be concluded that, while the budgeting competencies of university management are rather large, the steering capacity of these competencies is limited. From the point of view of the budget's role as a management tool for planned change, a divisionalized structure is preferable to the structure of a professional bureaucracy.

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